

## 4. Findings

### *Mortality*

Arguably, the most severe consequence of substance use is death. Table 4.1 outlines the number of drug and alcohol-induced deaths, and 4.2 presents the state's five leading causes of death in comparison to the number of deaths caused by drug and alcohol use.

#### *Drug and Alcohol-Related Deaths.*

The Arizona Department of Health Services includes accidental poisoning by and exposure to drugs and homicide by drugs in its drug-induced death category; its alcohol-induced death category is inclusive of deaths due to alcohol use, degeneration of the nervous system due to alcohol use, alcoholic liver disease, accidental poisoning by and exposure to alcohol and intentional self-poisoning (Differences in the Health Status Among Race/Ethnic Groups, Arizona, 2005). Table 4.2 indicates that in 2005, there were 1,454 deaths in Arizona attributed to alcohol and drugs (Arizona Health Status and Vital Statistics, Table 2B-6).

**Finding:** In 2005, the rate of drug-induced deaths in Arizona was higher than the rate of alcohol-induced deaths.

**Finding:** Drug and alcohol-related deaths, including those attributable to motor vehicle and boating fatalities (i.e., those reported by the Arizona Department of Transportation and the Arizona Game and Fish Department), accounted for 1,689 deaths in Arizona in 2005.

**Table 4.1. Number and Rate\* of Alcohol and Drug-Induced Deaths, Arizona, 2005**

Indicator	N	Rate
Drug-induced deaths	799	13.20
Alcohol-induced deaths	655	10.80
Alcoholic liver disease**	424	7.00

\* Crude death rate per 100,000 persons

\*\* Deaths due to alcoholic liver disease are included in the overall calculation of alcohol-induced deaths.

Source: *Arizona Health Status and Vital Statistics*, Arizona Department of Health Services. Table 2B-6: *Deaths and Death Rates by Gender for Selected 113 Causes, Arizona Residents, 2005.*

***Alcohol-Related Motor Vehicle Fatalities.***

The Arizona Department of Transportation (ADOT) collects data on crashes and crash injuries and deaths, including crashes in which the driver was impaired by drinking. Table 4.2 indicates that in 2005, there were 233 alcohol-related crash deaths (Arizona Motor Vehicle Crash Facts, 2005).

The National Highway Traffic Safety Administration uses a statistical model to amend the statistics from each state agency in an effort to estimate the likelihood that unclassified crash deaths can be attributed to alcohol (NHTSA DOT HS 810 627). Their estimation method increases the Department of Transportation's figure over 500%, to 1,177 alcohol-related crash deaths in Arizona (see Table 4.2). This finding may indicate a need for Arizona to look at the criteria used for classifying motor vehicle accidents as alcohol-related.

***Alcohol-Related Boating Fatalities.***

The Arizona Game and Fish Department reports on alcohol-related accidents and fatalities that occur on the state's waterways. As in 2005, there were 2 alcohol-related boating fatalities reported. There are much fewer alcohol-related boating fatalities than alcohol-related motor vehicle fatalities. This indicates that, while it is important to stress the need not to operate any motorized vehicle while under the influence of drugs or alcohol, prevention efforts should be targeted at reducing alcohol-related motor vehicle deaths on our roadways instead of those occurring on our state's waterways.

### Smoking-Related Deaths.

Of the three smoking-related causes of death examined here (i.e., malignant neoplasms, cardiovascular diseases, and respiratory diseases), more people died in Arizona of malignant neoplasms than respiratory or cardiovascular diseases.

**Table 4.2. Comparison of the Five Leading Causes of Death in Arizona and Alcohol/Drug-Related Mortality**

	N
<i>Five Leading Causes of Death</i> <sup>1*</sup>	
Diseases of the Heart	10,779
Malignant Neoplasms (Cancer)	9,673
Accidents (Unintentional Injury)	3,006
Chronic Lower Respiratory Diseases	2,778
Cerebrovascular Diseases	2,325
<b>Total</b>	<b>28,561</b>
<i>Alcohol/Drug Mortality</i>	
Drug-Induced Deaths <sup>2</sup>	799
Alcohol-Induced Deaths <sup>2</sup>	655
Alcoholic Liver Disease <sup>2**</sup>	424
Alcohol-Related Fatal Crashes—federal estimates <sup>3***</sup>	492
Alcohol-Related Fatal Crashes—state data <sup>4</sup>	233
Alcohol-Related Boating Fatalities <sup>5</sup>	2
<i>Smoking-Attributable Mortality</i> <sup>+</sup>	
Malignant Neoplasms	2,412
Cardiovascular Diseases	1,911
Respiratory Diseases	1,997
<b>Total</b>	<b>6,320</b>

\* Leading cause of death based on the underlying cause.

\*\* Deaths due to alcoholic liver disease are included in the calculation of alcohol-induced deaths.

\*\*\* Federal estimates differ from state reports due to the estimation method used in federal calculations to classify fatal accidents for which alcohol involvement is unknown (NHTSA DOT HS 810 627).

<sup>+</sup> Among adults aged 35 and older; number of deaths does not include those attributable to burns or second-hand smoke. Figures are averages of number of deaths for each cause of death from 1997 – 2001.

<sup>1</sup> *Arizona Health Status and Vital Statistics*, Arizona Department of Health Services. Table 2B-1: Number of Deaths for the Leading Causes of Mortality by Year, Arizona, 1995 – 2005.

<sup>2</sup> *Arizona Health Status and Vital Statistics*, Arizona Department of Health Services. Table 5E-12: Deaths by County of Residence and Gender for Selected 113 Causes, Arizona, 2005.

<sup>3</sup> *Traffic Safety Facts, Arizona, 2005*, National Highway Traffic Safety Administration.

<sup>4</sup> *Arizona Motor Vehicle Crash Facts, 2005*, Arizona Department of Transportation.

<sup>5</sup> *2005 Arizona Boating Safety Report*. Arizona Game and Fish Department.

<sup>6</sup> *Evaluation, Research and Development Unit Report Smoking-Attributable Mortality, Morbidity, and Economic Costs (SAMMEC) Estimates for Arizona, FY 2006 – 2007*.

### ***Trends in Mortality.***

Table 4.3 illustrates the trends in alcohol and drug-related mortality in Arizona from 2000 – 2006. It is clear that the incidence of both drug and alcohol-induced deaths have increased over the period of observation (2000 – 2005). It is more difficult, however, to draw conclusions about alcohol-related crash fatalities. If we look to the data provided by the National Highway Traffic Safety Administration, we see a slight increase in the number of fatalities over time. Conversely, the data from the Arizona Department of Transportation indicate a slight decrease in the incidence of such deaths over the same time period.

### ***Trends in Drug and Alcohol-Related Deaths.***

Figures 4.1 – 4.4 graphically represent the alcohol and drug-induced death data presented in Table 4.3. The number of deaths due to alcohol use was higher than the number of deaths caused by drug use in 2000, a pattern that reversed in 2001. Since that time, drug-induced deaths and death rates have remained higher than those for alcohol.

Between 2000 and 2005, the number of drug-induced deaths more than doubled (from 334 to 799). This increase cannot be blamed solely on an increase in Arizona's population as the rates of drug-induced deaths also doubled (from 6.5 to 13.2). Further, the number of alcohol-induced deaths increased by more than one-third (from 436 to 655) between 2000 and 2005 and the rates for alcohol-induced deaths increased by over 20% (from 8.5 to 10.8).

According to federal estimates, there was a 10% increase in the overall number of alcohol-related crash deaths in Arizona between 2000 and 2005.

The incidence of alcohol-related boating fatalities has been relatively stable. However, as the number of alcohol-related boating fatalities is so low, it is difficult to assess changes in the number of alcohol-related boating fatalities over time.

### ***Trends in Alcohol-Related Motor Vehicle Fatalities.***

According to federal estimates, there was more than a 20% increase in the number of alcohol-related crash deaths in Arizona between 2000 and 2006.

### ***Trends in Alcohol-Related Boating Fatalities.***

The incidence of alcohol-related boating fatalities has been relatively stable. However, as the number of alcohol-related boating fatalities is so low, it is difficult to assess changes in the number of alcohol-related boating fatalities over time.

**Finding:** From 2000 to 2005, both alcohol-induced and drug-induced deaths increased. Drug-induced deaths more than doubled over the time period.

**Table 4.3. Trends in Alcohol and Drug-Related Mortality in Arizona, 2000 – 2006**

Indicator	2000	2001	2002	2003	2004	2005	2006
Drug-Induced Deaths <sup>1</sup>	334	577	645	646	745	799	--
Alcohol-Induced Deaths <sup>1</sup>	436	424	489	543	564	655	--
Alcoholic Liver Disease <sup>1*</sup>	298	251	305	318	352	424	--
Alcohol-Related Fatal Crash Deaths—federal estimate <sup>2**†</sup>	456	488	477	470	435	492	585
Alcohol-Related Fatal Crash Deaths—state data <sup>3</sup>	266	258	274	298	256	233	--
Alcohol-Related Boating Fatalities <sup>4</sup>	1	3	3 <sup>+</sup>	6	4	2	4

-- indicates data that was not available for this report or were not collected in that year.

<sup>+</sup> In addition to the 3 alcohol-related boating fatalities in 2002, there was 1 drug-related boating fatality.

<sup>†</sup> Data for 2006 were garnered from the National Highway Traffic Safety Administration report entitled *2006 Traffic Safety Annual Assessment—Alcohol-Related Fatalities*, Retrieved from: <http://www-nrd.nhsta.dot.gov/CMSWeb/index.aspx>.

<sup>1</sup> *Arizona Health Status and Vital Statistics*, Arizona Department of Health Services. Table 2B-6: Deaths by County of Residence and Gender for Selected 113 Causes, Arizona, 2000; 2001; 2002; 2003; 2004; 2005.

<sup>2</sup> *Traffic Safety Facts, Arizona, 2000; 2001; 2002; 2003; 2004; 2005*, National Highway Traffic Safety Administration.

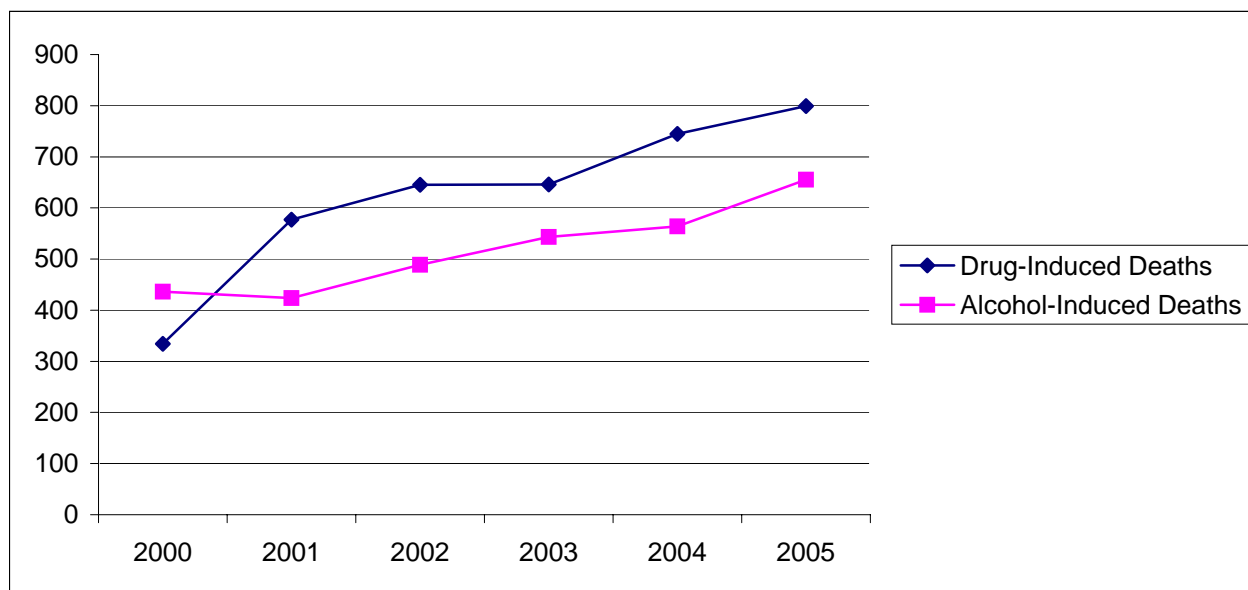
<sup>3</sup> *Arizona Motor Vehicle Crash Facts*, 2000; 2001; 2002; 2003; 2004; 2005, Arizona Department of Transportation.

<sup>4</sup> 2000; 2001; 2002; 2003; 2004; 2005; *2006 Arizona Boating Safety Report*. Arizona Game and Fish Department.

\* Deaths due to alcoholic liver disease are included in the calculation of the number of alcohol-induced deaths.

\*\* Federal estimates differ from state reports due to the estimation method used in federal calculations to classify fatal accidents for which alcohol involvement is unknown.

*Figure 4.1. Trends in Alcohol and Drug-Induced Deaths, 2000 – 2005.*



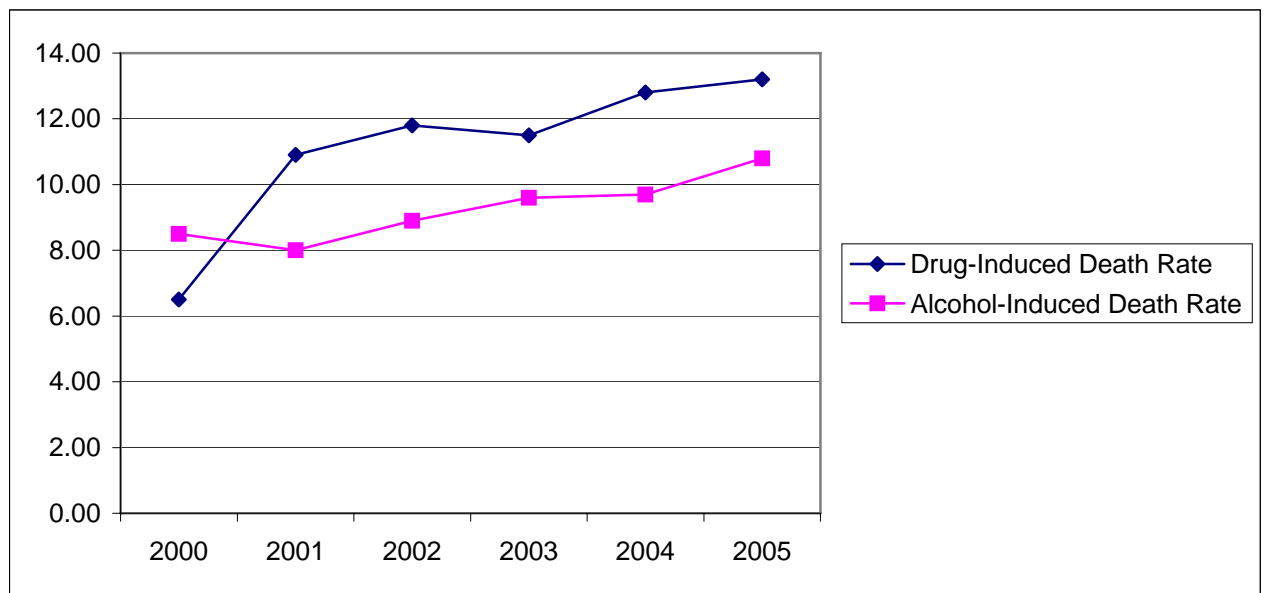
Source: *Arizona Health Status and Vital Statistics*, Arizona Department of Health Services. Deaths by County of Residence and Gender for Selected 113 Causes, Arizona, Table 2B-6: 2000; 2001; 2002; 2003; 2004; 2005.

**Table 4.4. Trends in Alcohol and Drug-Induced Crude Death Rates (per 100,000 persons) in Arizona, 2000 – 2005**

Indicator	2000	2001	2002	2003	2004	2005
Drug-Induced Deaths	6.50	10.90	11.80	11.50	12.80	13.20
Alcohol-Induced Deaths	8.50	8.00	8.90	9.60	9.70	10.80

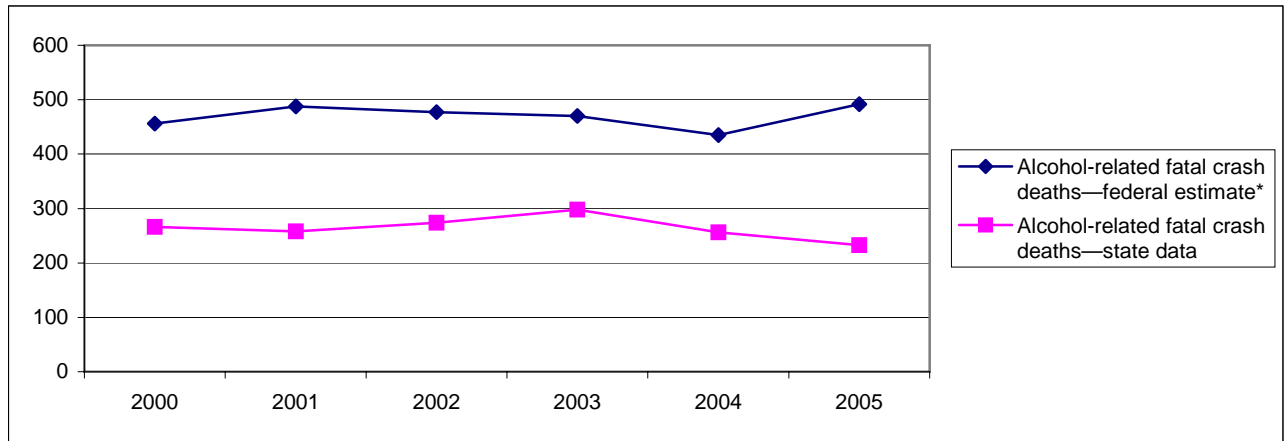
Source: *Arizona Health Status and Vital Statistics*, Arizona Department of Health Services. Table 2B-6: Deaths by County of Residence and Gender for Selected 113 Causes, Arizona, 2000; 2001; 2002; 2003; 2004; 2005.

**Figure 4.2. Trends in Alcohol and Drug-Induced Crude Death Rates (per 100,000 Persons), 2000 – 2005.**



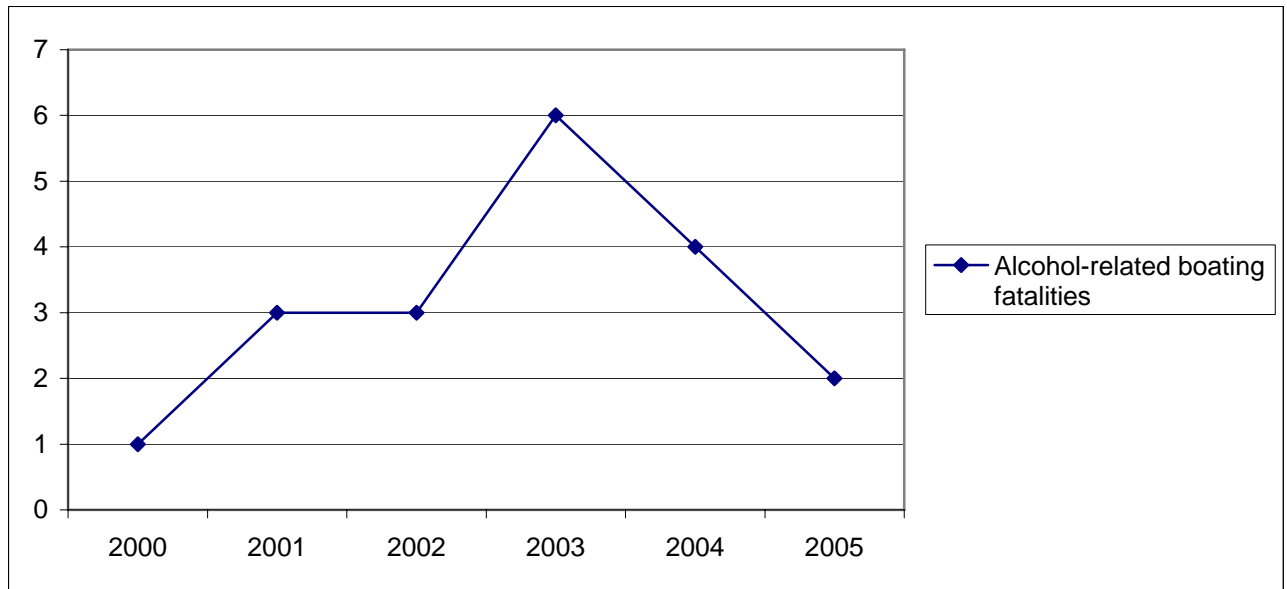
Source: *Arizona Health Status and Vital Statistics*, Arizona Department of Health Services. Deaths by County of Residence and Gender for Selected 113 Causes, Arizona, Table 2B-6: 2000; 2001; 2002; 2003; 2004; 2005.

**Figure 4.3. Comparison of Trends in Federal & State-Level Alcohol-Related Crash Death Data, 2000 – 2005.**



\* Federal estimates differ from state reports due to the estimation method used in federal calculations to classify fatal accidents for which alcohol involvement is unknown.  
 Federal Data Source: *Traffic Safety Facts, Arizona, 2000; 2001; 2002; 2003; 2004; 2005*, National Highway Traffic Safety Administration.  
 State Data Source: *Arizona Motor Vehicle Crash Facts, 2000; 2001; 2002; 2003; 2004; 2005*, Arizona Department of Transportation.

**Figure 4.4. Trends in Alcohol-Related Boating Fatalities, 2000 – 2005.**



Source: 2000; 2001; 2002; 2003; 2004; 2005 *Arizona Boating Safety Report*. Arizona Game and Fish Department.

***Trends in Smoking-Related Deaths.***

Longitudinal data on smoking-related deaths were not available for this report.

**Mortality Summary:** While the rates for drug-induced deaths are higher than those caused by alcohol among individuals in Arizona, according to Miller, T., & Pacific Institute Research and Evaluation (2001), alcohol kills six and a half times more youth than all illicit drugs combined. Further, the rates of alcohol and drug-induced deaths have risen over time in Arizona.